ABSTRACT

A π -conjugated compound has rings represented by Formulae (I) and (II), an odd number of rings being interposed between the rings of Formula (I), and an odd number of rings being interposed between the rings of Formula (II):

where R_1 and R_2 are hydrogen or a substituted or unsubstituted linear, cyclic, or branched alkyl group of 1 to 20 carbon atoms, at least one of R_1 and R_2 being not hydrogen; and R_3 and R_4 are hydrogen or a substituted or unsubstituted linear, cyclic, or branched perfluoroalkyl group of 1 to 20 carbon atoms.